

Petition to List as Threatened or Endangered

Eastern Oysters

On January 11, 2005, NOAA Fisheries Service received a petition from Ecosystem Initiatives Advisory Services to list eastern oyster (*Crassostrea virginica*) as threatened or endangered under the Endangered Species Act (ESA). The petition primarily presents information regarding threats to the Chesapeake Bay stock of oysters; however, there is information on the status of and threats to the species throughout its range.

Oysters in the Chesapeake Bay have been reduced to less than 1 percent of their former abundance. Coastwide, declines are evident and are the result of disease (e.g., MSX and Dermo), overharvest, and habitat loss/degradation. In high salinity areas of both the Delaware Bay and Chesapeake Bay, *Haplosporidium nelsoni* (MSX) was responsible for the mortality of close to 100 percent of the adult standing stock biomass during a 3-year period in the late 1950s and early 1960s. Initially, MSX was found in coastal bays from North Carolina, Virginia, Maryland, Delaware, New Jersey, Connecticut, and New York, but associated mortalities did not occur south of Virginia or north of New Jersey. A range extension of the disease occurred in the 1980s, and MSX has now been documented from Maine to Florida. Since 1995, the range of MSX associated mortalities has expanded to include both Maine and New York.

Currently, there is limited information on the abundance of oysters throughout its range. As such, commercial landings data are often used as a surrogate to indicate potential declines in abundance. Commercial landings throughout the species' range along the East coast have declined to approximately 2 percent of the recorded historic highs. Reported landings for New England reached a high in 1911 at 19,458,939 pounds but in 2003, recorded landings were only 348,927 pounds.

In the Mid-Atlantic, the reported record high was in 1912 at 30,868,420 pounds, but in 2003, landings declined to 1,256,200 pounds. A similar trend is evident in South Atlantic landings with the reported record high in 1904 of 17,738,800 pounds and only 658,896 pounds reported in 2003. The Chesapeake Bay landings have shown the greatest decrease from record highs in 1897 of 87,463,050 pounds to only 236,512 pounds in 2003. In the Gulf of Mexico, harvest has generally increased or remained stable in the last several years. Louisiana is now the top-producing oyster state and has contributed an average of 42 percent to the total U.S. harvest.

In the 1600s, large oyster reefs broke the water's surface at low tide and presented navigational hazards in many Atlantic bays and estuaries. These reefs had been created over 7,000 years by generations of oysters. Today, remnants of these reefs exist as low-lying bars.

Many states have implemented restoration projects to restore oyster reef habitat and oyster stocks. The restoration projects face significant challenges and are showing mixed success. Degraded habitat, poor water quality, and disease often hamper restoration efforts.

Oysters grow well on a hard, rocky bottom or on semi-hard mud firm enough to support their weight. Shifting sand and soft mud are not suitable bottom habitats. Many formerly productive oyster bottoms along the Atlantic coast have been destroyed by a high rate of sedimentation. Rapid settling of suspended material may be highly destructive to an oyster community.

Each state manages the oyster stocks within their waters. The State of Maryland is considering a proposal to introduce the exotic Asian oyster (*Crassostrea ariakensis*) into the Chesapeake Bay. The introduction of an exotic species can have consequences at multiple levels. As such, the effects must be carefully considered. Also, the potential for this introduced species to expand its range beyond the Bay, thereby potentially affecting eastern oyster stocks in adjacent systems (e.g., Delaware Bay or North Carolina waters), must also be considered.

After reviewing the information contained in the petition, as well as other information readily available, the agency determined that a status review for this species was warranted. A status review team has been assembled comprised of 12 state and federal representatives. They are currently compiling the best available biological and commercial information to assess the current status of this species. Once the status review document is complete, it will be independently peer reviewed. The agency will use this document as the basis for a decision

on whether this species should be listed as threatened or endangered under the ESA. This determination will be published in the Federal Register within 12 months of receipt of the petition (by January 11, 2006).

It is important to note that the agency is only at the beginning stages of a long process. Until the status review is complete, a decision on listing cannot be made. If the agency determines that listing is warranted, a proposed rule soliciting public comment will be published. All comments will be considered and addressed before any final decision is made.

For more information on the status review process and the response to this petition, please contact Kim Damon-Randall at kimberly.damon-randall@noaa.gov or 978-281-9300 x 6535. The petition and related information have also been posted at http://www.nero.noaa.gov/prot_res/CandidateSpeciesProgram/eas.htm.